1. A dehydrocoupling polycondensation method for synthesizing polymetalloles including:

obtaining a dihydrometallole that includes silicon or germanium atoms;

designating a reducing agent for preparation of dihydrometallole monomer;

measuring a predetermined molar percentage of said reducing agent corresponding to a molar amount of said dihydrometallole;

selecting a catalyst; and

reacting said catalyst with said dihydrometallole to obtain a polymetallole.

2. The method of claim 1 wherein said step of obtaining a dihydrometallole comprises reducing a dichlorometallole and subsequently catalytically dehydrocoupling the reduced dichlorometallole to yield a polymer.

3. The method of claim 1 wherein said step of obtaining a dihydrometallole comprises adding dichlorosilane to a solution of lithium and diphenylacetylene and subsequently catalytically dehydrocoupling a product to yield a polymer.

4. The method of claim 1 wherein said obtained dihydrometallole is 1,1-dihydro-2,3,4,5-tetraphenylsilole.

5. The method of claim 1 wherein said obtained dihydrometallole is 1,1-dihydro-2,3,4,5-tetraphenylgermole.

6. The method of claim 1 wherein said reducing agent is designated as $LiAlH_4$.

7. The method of claim 1 wherein said catalyst is Wilkinson's catalyst, which is $Rh(PPh_3)_3Cl$.

8. The method of claim 7 further comprising selecting said predetermined molar percentage of said Wilkinson's catalyst to be between 1 and 5 mol %.

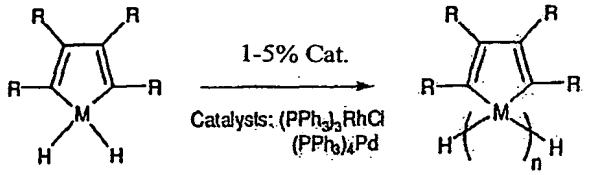
9. The method of claim 1 wherein said catalyst is selected to be $Pd(PPh_3)_4$.

10. The method of claim 9 further comprising selecting said predetermined molar percentage of $Pd(PPh_3)_4$ to be between 1 and 5 mol %.

11. The method of claim 1 wherein said catalyst is selected to a combination of H_2PtCl_6 xH_2O and allylamine.

12. The method of claim 11 further comprising selecting said predetermined molar percentage of said H_2PtCl_6 xH_2O to be between 0.1 and 0.5 mol % and selecting said predetermined molar percentage of allylamine to be between 200 and 400 mol %.

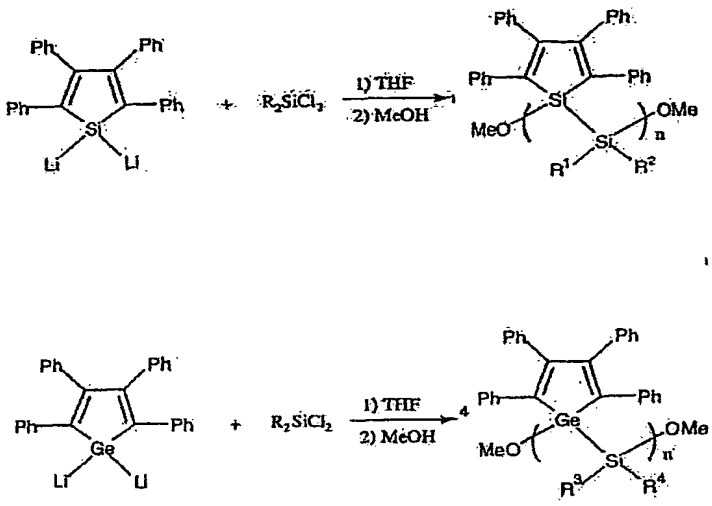
13. A catalytic dehyrdocoupling method for synthesizing metallole copolymers according to the following equation:



where R is a H or an alkyl or aryl group selected from the group consisting of Me or Ph; and

where M is selected from the group consisting of Si and Ge.

14. A Wurtz coupling polycondensation method for synthesizing metallole copolymers according to the following equations:

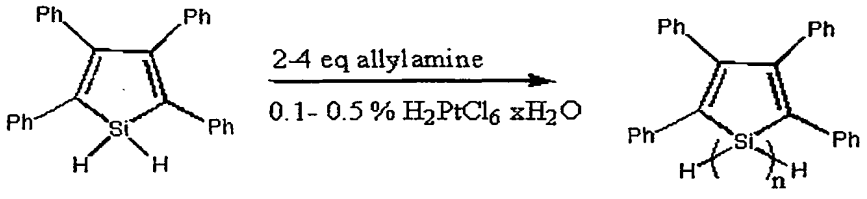


where Ph is a phenyl group, Me is a methyl group, and R is Me or Ph;

where the pair R^1 and R^2 are selected from the group consisting of: R^1= H and R^2= Me; R^1= H and R^2= Ph; R^1= Ph and R^2= Ph; and R^1= H and R^2= H; and

where the pair of R^3 and R^4 are selected from the group consisting of: R^3= H and R^4= Me; R^3= H and R^4= Ph; and R^3= Ph and R^4= Ph.

15. A catalytic dehyrdocoupling method for synthesizing metallole polymers according to the following equation:



16. A method for detecting an analyte that may be present in ambient air or complex aqueous media comprising:

providing a polymer or copolymer containing a metalloid-metalloid backbone;

exposing said polymer or copolymer to a suspected analyte or a system suspected of including the analyte; and

measuring a quenching of photoluminescence of the metallole polymer or copolymer exposed to said system.

17. The method of claim 16 further comprising selecting said provided polymer or copolymer to be a polymer or copolymer containing tetraphenylsilole.

18. The method of claim 16 further comprising selecting said provided polymer or copolymer to be a polymer or copolymer containing tetraphenylgermole.

19. The method of claim 16 further comprising selecting a metalloid-metalloid backbone of said provided polymer or copolymer group of Si-Si, Ge-Ge, and Si-Ge.

20. The method of claim 16 wherein said step of providing a polymer or copolymer further comprises casting a thin film of said provided metallole polymer or copolymer.

21. The method of claim 20 further comprising depositing said prepared thin film on a glass substrate.

22. The method of claim 16 wherein said step of exposing said polymer or copolymer includes submerging said polymer or copolymer in an aqueous solvent.

23. The method of claim 16 wherein said step of exposing said polymer or copolymer includes submerging said polymer or copolymer in an organic solvent.

24. The method of claim 16 further comprising dissolving the polymer or copolymer in an organic solvent from the group consisting of toluene or THF.

25. The method of claim 16 wherein said step of exposing said polymer or copolymer includes submerging said polymer or copolymer in aqueous inorganic acids.

26. The method of claim 25 further comprising selecting said aqueous inorganic acids from the group consisting of H_2SO_4 and HF.

26. The method of claim 16 wherein said step of measuring a quenching of photoluminescence includes subjecting said polymer or copolymer to fluorescence spectrometry.

27. The method of claim 16 wherein said step of providing a polymer or copolymer comprises dissolving the polymer or copolymer in solution.

28. The method of claim 16 wherein said step of providing a polymer or copolymer comprises producing a colloid of the polymer or copolymer.

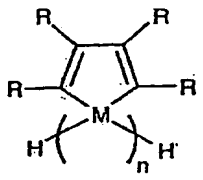
29. An inorganic polymer sensor for detecting nitroaromatic compounds comprising:

a substrate; and

a thin film of a metallole polymer or copolymer deposited on said substrate.

30. The sensor of claim 29 wherein said substrate is glass.

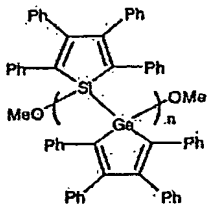
31. The sensor of claim 29 wherein said metallole polymer or copolymer is represented by the structure



where R is an alkyl group selected from the group consisting of H, Me, or Ph; and

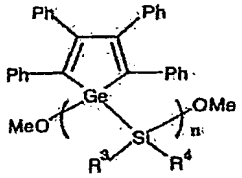
where M is selected from the group consisting of Si and Ge.

32. The sensor of claim 29 wherein said metallole polymer or copolymer is represented by the structure



where Ph is a phenyl group and Me is a methyl group.

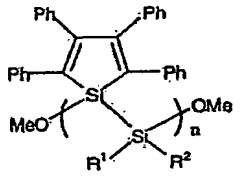
33. The sensor of claim 29 wherein said metallole polymer or copolymer is represented by the structure



where Ph is a phenyl group and Me is a methyl group; and

where the pair of R^3 and R^4 are selected from the group consisting of: R^3= H and R^4= Me; R^3= H and R^4= Ph; and R^3= Ph and R^4= Ph.

34. The sensor of claim 29 wherein said metallole polymer or copolymer is represented by the structure



where the pair of R^1 and R^2 are selected from the group consisting of R^1= H and R^2= Me; R^1= H and R^2= Ph; and R^1= Ph and R^2= Ph.